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AgustaWestland Products

SERVICE BULLETIN

OPTIONAL

N° 189-387

DATE: February 8, 2024

REV. : /

TITLE

ATA 21 - HEATING DUCT REAR AVIONIC BAY MODIFICATION

REVISION LOG

First Issue

1. PLANNING INFORMATION

A. EFFECTIVITY

Part I

AW189 helicopters S/N 49007, S/N 49008, S/N 49018, S/N 49019, S/N 49025, S/N 49028, from S/N 89001 to S/N 89004 and from S/N 92001 to S/N 92010 equipped with Heating System Duct P/N 70688A010001 not already remarked with suffix “R” or suffix “T1” on identification label.

Part II

AW189 helicopter S/N 89015 equipped with Heating System Duct P/N 70688A010001 not already remarked with suffix “R” or suffix “T1” on identification label.

B. COMPLIANCE

Part I

At Customer's option.

Part II

At Customer's option.

C. CONCURRENT REQUIREMENTS

SB 189-296.

D. REASON

On few AW189 helicopters a damage to the Heating System Duct P/N 70688A010001 occurred.

LHD issued SB189-296 in order to improve the installation of the affected duct by mean of both the repositioning of an existing P-clamp and installing an additional fixing point.

In order to continue to improve the reliability of the system, LHD released this SB to reinforce the joint areas of the heating system duct and, consequently, to replace part of the fixing hardware.

Annex A of this SB gives instructions on how to apply rework by means of the repair kit P/N BWT40217-1.

LH issued this SB for the following reason:

Helicopter Reliability/Maintainability	
Product Improvement	✓
Obsolescence	
Customization	
Product/Capability Enhancement	

E. DESCRIPTION

This Service Bulletin is issued in order to give the required instruction to improve the installation of the Heating System Duct.

Part I requires the repositioning of the P-clamp, the installation of the additional fixing point and the application of the duct reinforcement.

Part II of the SB requires the installation of the duct reinforcement only for the helicopters already equipped with the improved installation.

F. APPROVAL

The technical content of this Service Bulletin is approved under the authority of DOA nr. EASA.21.J.005. For helicopters registered under other Aviation Authorities, before applying the Service Bulletin, applicable Aviation Authority approval must be checked within Leonardo Helicopters customer portal.

EASA states mandatory compliance with inspections, modifications or technical directives and related time of compliance by means of relevant Airworthiness Directives.

If an aircraft listed in the effectivity embodies a modification or repair not LHD certified and affecting the content of this Service Bulletin, it is responsibility of the Owner/Operator to obtain a formal approval by Aviation Authority having jurisdiction on the aircraft, for any adaptation necessary before incorporation of the present Service Bulletin.

G. MANPOWER

To comply with this Service Bulletin, the following MMH are deemed necessary.

Part I: approximately ten (10);

Part II: approximately eight (8);

MMH are based on hands-on time and can change with helicopter configuration, personnel and facilities available. MMH are not comprehensive of the overall hours necessary to get access to work areas and to remove all the equipment that interferes with the application of the prescribed instructions.

H. WEIGHT AND BALANCE

N.A.

I. REFERENCES

I.1 PUBLICATIONS

Following Data Modules refer to AMP:

DATA MODULE		DESCRIPTION	PART
DM01	89-A-00-20-00-00A-120A-A	Helicopter on ground for a safe maintenance	I,II
DM02	89-A-06-41-00-00A-010A-A	Access doors and panels - General data	I,II
DM03	89-A-25-80-00-00A-010A-A	Insulation and lining - General data	I,II
DM04	89-A-21-40-09-00A-520A-A	Jet pump - Remove procedure	I,II
DM05	89-A-21-40-09-00A-720A-A	Jet pump - Install procedure	I,II
DM06	89-A-20-10-16-02A-920A-A	Bonded studs - Replacement	I
DM07	89-A-20-00-00-00A-711A-A	Threaded fasteners - Tighten procedure	I, II
DM08	89-A-21-90-00-00A-320A-A	Integrated environmental contro system (ECS) kit - Operation tes	I,II
DM09	89-A-21-40-00-00A-320A-A	Heating system - Operation test	I,II

I.2 ACRONYMS & ABBREVIATIONS

AMDI	Aircraft Material Data Information
AMP	Aircraft Maintenance Publication
DM	Data Module
DOA	Design Organization Approval
EASA	European Aviation Safety Agency
ECS	Environmental Control System
IPD	Illustrated Parts Data

ITEP	Illustrated Tool and Equipment Publication
LHD	Leonardo Helicopters Division
MMH	Maintenance Man Hours
N.A.	Not Applicable
P/N	Part Number
S/N	Serial Number
SB	Service Bulletin

I.3 ANNEX

Annex A Liebherr Service Bulletin “SB-70688-21-01” Rev.0, date 26/01/2023

J. PUBLICATIONS AFFECTED

AW189 Aircraft Maintenance Publication (AMP)

AW189 Illustrated Parts Data Publication (IPD)

K. SOFTWARE ACCOMPLISHMENT SUMMARY

N.A.

2. MATERIAL INFORMATION

A. REQUIRED MATERIALS

A.1 PARTS

PART I

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
1	**8G2140P02411**		**HEATING DUCT, AFTBAY**	**REF**	**.**		**-**
2	A388A3E14C75	A388A3E14C	Standoff	1	..		189-387L1
3	A388A3E24C75	A388A3E24C	Standoff	1	..		189-387L1
4	AS21919DF58		Clamp	2	..		189-387L1
5	NAS1149C0332R		Washer	2	..		189-387L1
6	NAS1802-3-7		Screw	2	..		189-387L1
7	AW001CK06HS	A629A06HS	Tiedown strap	2	..		189-387L1
8	BWT40217-1		Repair kit	1	.		-

PART II

N.A.

Refer also to IPD for the spares materials required to comply with the AMP DMs referenced in the accomplishment instructions.

A.2 CONSUMABLES

The following consumable materials, or equivalent, are necessary to accomplish this Service Bulletin:

#	SPEC./LHD CODE NUMBER	DESCRIPTION	Q.TY	NOTE	PART
9	EE267-02-075B	Adhesive tape	AR	(1)(3)	I
10	CB200-40 (C356) Code No.999999999000001675	Adhesive	AR	(2)(3)	I
11	MS21042L3	Nut	AR	(3)	I
12	NAS1149C0332R	Washer	AR	(3)	I
13	Commercial Code No.999999999000001539	Momentive PSA529 Silicone Adhesive	AR	(3)	I,II
14	Commercial Code No.999999999000001539	Momentive SRC18 Catalyst	AR	(3)(5)	I,II

Refer also to AMDI for the consumable materials required to comply with the AMP DM referenced in the accomplishment instructions.

Refer also to Service Bulletin “SB-70688-21-01” Section 2 “Material Information” in Annex A for the consumable materials required for compliance.

A.3 LOGISTIC MATRIX

In order to apply this Service Bulletin, the following Logistic P/N can be ordered in accordance with the applicable notes:

LOGISTIC P/N	Q.TY (PER HELO)	NOTE	PART
189-387L1	1	-	Part I
BWT40217-1	1	-	Part I and Part II

NOTES

(1) As alternative, it is possible to use Senior Aerospace F6286 or F6289, Orcotape OT16-A or OT-157TN, Jehier KB42 or KB73.

(2) As alternative, it is possible to use Permabond F241 (C249).

(3) Item to be provided as local supply.

(4) Item required to comply with Liebherr Service Bulletin “SB-70688-21-01” to be supplied by LH.

(5) Use with Momentive PSA529 Silicone Adhesive.

B. SPECIAL TOOLS

The following special tools, or equivalent, are necessary to accomplish this Service Bulletin:

#	P/N	DESCRIPTION	Q.TY	NOTE	PART
17	Commercial	Torque wrench	1	(B1)	I

Refer also to ITEP for the special tools required to comply with the AMP DM referenced in the accomplishment instructions.

Refer also to Annex A for the special tools required to comply with this Service Bulletin.

SPECIAL TOOLS NOTES

(B1) Item to be procured as local supply.

C. INDUSTRY SUPPORT INFORMATION

Product enhancement.

3. ACCOMPLISHMENT INSTRUCTIONS

GENERAL NOTES

a) Place an identification tag on all components that are re-usable, including the attaching hardware that has been removed to gain access to the modification area and adequately protect them until their later re-use.

b) Let adhesive cure at room temperature for at least 24 hours unless otherwise specified.

c) All lengths are in mm.

d) Exposed thread surface and nut must be protected using a layer of tectyl according to MIL-C-16173 grade I.

e) The bonded studs can be positioned and secured in accordance with the drainage cowling or outboard side-panel as indicated. Drawings are for reference only. Follow the instructions reported in the procedure to perform a correct maintenance of the heating system duct.

PART I

1. In accordance with AMP DM 89-A-00-20-00-00A-120A-A, prepare the helicopter on ground for a safe maintenance. Disconnect the battery, all electrical power sources and/or the external power supply.
2. In accordance with AMP DM 89-A-06-41-00-00A-010A-A and with reference to Figure 1 get access on the right side of the baggage compartment by removing all necessary panels, liners, fixing hardware and avionics equipment installed next to right-hand afterward heating system duct area.
3. With reference to Figures 1 thru 3, remove the heating system duct P/N 70688A010001 as described in the following procedure:
   3.1 In accordance with applicable steps of AMP DM 89-A-21-40-09-00A-520A-A and with reference to Figure 1, remove the clamp P/N NAS1922-0350-3H that connects the duct to the jet pump (location 1) and carefully move away the duct from the jet pump. Retain hardware for further use.

3.2 With reference to Figure 3, get access to the lower part of the duct and remove the bolt P/N AN3C4A, the nut P/N MS21042L3, the washer P/N NAS1149C0332R, the clamps P/N AS21919DG64 and P/N NAS1922-0350-3H. Retain hardware for later use.

3.3 With reference to Figure 1, remove the bolt P/N AN3C3A, the nut P/N MS21042L3, n°2 washers P/N NAS1149C0332R and the clamp P/N AS21919WDF08 (location 6). Retain hardware for later use.

3.4 With reference to Figure 2 Detail B (WAS), remove the clamp P/N AS21919DF64, the nut P/N MS21042L3 and the washer P/N NAS1149C0332R from the heating system duct P/N 70688A010001 at position n°1. In accordance with AMP DM 89-A-20-10-16-02A-920A-A and with reference to Figure 2 Detail B (WAS), remove the existing stud P/N A366A3E10C from the panel at the same position.

3.5 With reference to Figure 2 Detail B (WAS), remove the tiedown strap P/N AW001CK06HS. Remove also the support P/N AW001CL002C-X1 from the structure.

3.6 With reference to Figure 3, remove the n°2 tiedown strap P/N A629A06HS that secure the duct to the outboard side-panel (locations 2 and 3).

4. In accordance with procedure reported in Service Bulletin “SB-70688-21-01” Section 2.G (refer to Annex A), perform the reinforcement procedure for the heating system duct.

5. In accordance with procedure reported in Service Bulletin “SB-70688-21-01” Section 2.I (refer to Annex A), re-identify the heating system duct.

6. With reference to Figures 1 and 3, install the reworked heating system duct P/N 70688A010001-R in accordance with the following procedure:

6.1 Locate the reworked heating system duct P/N 70688A010001-R on its position.

6.2 In accordance with applicable steps of AMP DM 89-A-21-40-09-00A-720A-A and with reference to Figure 1,

- Install the clamp P/N NAS1922-0350-3H on the upper end of the heating duct (location 1);
- Move the duct on its position on the jet pump;
- Torque the screw of the clamp to 2.3 thru 3.4 Nm (20 thru 30 lbf in) by means of a Torque wrench.

6.3 With reference to Figure 3, install n°2 tiedown straps P/N A629A06HS on the heating system duct (locations 2 and 3).

6.4 With reference to Figure 3, install the clamp P/N AS21919DG56 to the bracket P/N 20326-13 by means of the bolt P/N AN3C4A and the washer P/N NAS1149C0332R.

NOTE

When applying the tape, be sure to apply it on the second rigid bend only. Taped areas cannot exceed 20÷25 mm wide.

NOTE

Pay particular attention not to load the joint between the second rigid bend and the flexible duct in any way. Make sure that the duct maintains its natural form to avoid strain to the duct joints.

6.5 With reference to Figure 1, identify the location 4 on the second rigid bend (between the second rigid bend and the flexible duct) by gently compressing the duct by hand, then mark the position on the second rigid bend by means of three layers of adhesive tape P/N EE267-02-075B.

6.6 With reference to Figure 1, temporarily locate the clamp P/N AS21919DF58 on the taped area and countermark the location 4 of the standoff P/N A388A3E14C75 on the panel.

6.7 In accordance with AMP DM 89-A-20-10-16-02A-920A-A and with reference to Figure 1, install the new standoff P/N A388A3E14C75 on the panel at location 4 by means of adhesive CB200-40 (C356).

NOTE

The P-clamp must be aligned at the correct position of the duct, as indicated by the adhesive tape, ensuring that the clamp is secured onto the rigid section.
If clamp P/N AS21919DF58 does not correctly fit the duct, it is permitted to use a bigger clamp P/N AS21919DF64 as alternative.

6.8 In accordance with AMP DM 89-A-20-00-00-00A-711A-A and with reference to Figure 1, install the clamp P/N AS21919DF58 on the heating system duct P/N 70688A010001-R at location 4 by means of the washer P/N NAS1149C0332R and the screw P/N NAS1802-3-7. Tighten the screw to the standard torque value.

NOTE

When applying the tape, be sure to apply it on the third rigid bend only. Taped areas cannot exceed 20÷25 wide.

NOTE

Pay particular attention not to load the joint between the third rigid bend and the flexible duct in any way. Make sure that the duct maintains its natural form to avoid strain to the duct joints.

6.9 With reference to Figure 1, identify the location 5 on the third rigid bend (between the third rigid bend and the flexible duct) by gently compressing the duct by hand and mark the position on the third rigid bend by using three layers of adhesive tape P/N EE267-02-075B.

6.10 With reference to Figure 1, temporarily locate the new clamp P/N AS21919DF58 on the taped area and countermark the location 5 of the standoff P/N A388A3E24C75 on the panel.

6.11 With reference to Figure 1, install the new standoff P/N A388A3E24C75 on the panel at location 5 by means of the adhesive CB200-40 (C356).

NOTE

The P-clamp must be aligned at the correct position of the duct, as indicated by the adhesive tape, ensuring that the clamp is secured onto the rigid section.
If clamp P/N AS21919DF58 does not correctly fit the duct, it is permitted to use a bigger clamp P/N AS21919DF64 as alternative.

6.12 With reference to Figure 1, install the clamp P/N AS21919DF58 on the heating system duct at location 5 by means of the washer P/N NAS1149C0332R and the screw P/N NAS1802-3-7. Tighten the screw to the standard torque value.

6.13 With reference to Figure 1, install the clamp P/N AS21919DG64 and the clamp P/N AS21919WDF08 (location 6) by means of the bolt P/N AN3C3A, the nut P/N MS21042L3 and n°2 washers P/N NAS1149C0332R. Tighten the nut to the standard torque value.

7. In accordance with AMP DM 89-A-06-41-00-00A-010A-A and with reference to Figure 1 and 3, re-install all necessary panels, liners, fixing hardware and avionic equipment previously removed.

8. Remove all the tools and other items from the work area.

9. Perform the system Operation Test in accordance with the applicable AMP DMs:
   - 89-A-21-90-00-00A-320A-A, Integrated environmental control system (ECS) kit - Operation test, or
   - 89-A-21-40-00-00A-320A-A, Heating system - Operation test.
10. Return the helicopter to flight configuration and record for compliance with Part I of this Service Bulletin on the helicopter logbook.
11. Gain access to My Communications section on Leonardo WebPortal and compile the "Service Bulletin Application Communication".

    As an alternative, send the attached compliance form to the following mail box:

    engineering.support.lhd@leonardo.com

    and (for North, Central and South America) also to:

    AWPC.Engineering.Support@leonardocompany.us

PART II

1. In accordance with AMP DM 89-A-00-20-00-00A-120A-A, prepare the helicopter on ground for a safe maintenance. Disconnect the battery, all electrical power sources and/or the external power supply.
2. In accordance with AMP DM 89-A-06-41-00-00A-010A-A and with reference to Figure 1 get access on the right side of the baggage compartment by removing all necessary panels, liners, fixing hardware and avionics equipment installed next to right-hand afterward heating system duct area.
3. With reference to Figures 1 thru 3, remove the heating system duct P/N 70688A010001.
4. In accordance with procedure reported in Service Bulletin “SB-70688-21-01” Section 2.G (refer to Annex A), perform the reinforcement procedure for the heating system duct.
5. In accordance with procedure reported in Service Bulletin “SB-70688-21-01” Section 2.I (refer to Annex A), re-identify the heating system duct.
6. With reference to Figures 1 and 3, install the reworked heating system duct P/N 70688A010001-R in accordance with the following procedure:
   - 6.1 Locate the reworked heating system duct P/N 70688A010001-R on its position.
   - 6.2 In accordance with applicable steps of AMP DM 89-A-21-40-09-00A-720A-A and with reference to Figure 1,
     - Install the clamp P/N NAS1922-0350-3H on the upper end of the heating duct (location 1);
     - Move the duct on its position on the jet pump;
     - Torque the screw of the clamp to 2.3 thru 3.4 Nm (20 thru 30 lbf in) by means of a Torque wrench.
   - 6.3 With reference to Figure 3, install n°2 tiedown straps P/N A629A06HS on the heating system duct (locations 2 and 3).
   - 6.4 With reference to Figure 3, install the clamp P/N AS21919DG56 to the bracket P/N 20326-13 by means of the bolt P/N AN3C4A and the washer P/N NAS1149C0332R.

NOTE

When applying the tape, be sure to apply it on the second rigid bend only. Taped areas cannot exceed 20÷25 mm wide.

NOTE

Pay particular attention not to load the joint between the second rigid bend and the flexible duct in any way. Make sure that the duct maintains its natural form to avoid strain to the duct joints.

6.5 With reference to Figure 1, identify the location 4 on the second rigid bend (between the second rigid bend and the flexible duct) by gently compressing the duct by hand, then mark the position on the second rigid bend by means of three layers of adhesive tape P/N EE267-02-075B.

NOTE

The P-clamp must be aligned at the correct position of the duct, as indicated by the adhesive tape, ensuring that the clamp is secured onto the rigid section.
If clamp P/N AS21919DF58 does not correctly fit the duct, it is permitted to use a bigger clamp P/N AS21919DF64 as alternative.

6.6 In accordance with AMP DM 89-A-20-00-00-00A-711A-A and with reference to Figure 1, install the clamp P/N AS21919DF58 on the heating system duct P/N 70688A010001-R at location 4 by means of the washer P/N NAS1149C0332R and the screw P/N NAS1802-3-7. Tighten the screw to the standard torque value.

NOTE

When applying the tape, be sure to apply it on the third rigid bend only. Taped areas cannot exceed 20÷25 wide.

NOTE

Pay particular attention not to load the joint between the third rigid bend and the flexible duct in any way. Make sure that the duct maintains its natural form to avoid strain to the duct joints.

6.7 With reference to Figure 1, identify the location 5 on the third rigid bend (between the third rigid bend and the flexible duct) by gently compressing the duct by hand

and mark the position on the third rigid bend by using three layers of adhesive tape P/N EE267-02-075B.

NOTE

The P-clamp must be aligned at the correct position of the duct, as indicated by the adhesive tape, ensuring that the clamp is secured onto the rigid section.

If clamp P/N AS21919DF58 does not correctly fit the duct, it is permitted to use a bigger clamp P/N AS21919DF64 as alternative.

6.8 With reference to Figure 1, install the clamp P/N AS21919DF58 on the heating system duct at location 5 by means of the washer P/N NAS1149C0332R and the screw P/N NAS1802-3-7. Tighten the screw to the standard torque value.

6.9 With reference to Figure 1, install the clamp P/N AS21919DG64 and the clamp P/N AS21919WDF08 (location 6) by means of the bolt P/N AN3C3A, the nut P/N MS21042L3 and n°2 washers P/N NAS1149C0332R. Tighten the nut to the standard torque value.

7. In accordance with AMP DM 89-A-06-41-00-00A-010A-A and with reference to Figure 1 and 3, re-install all necessary panels, liners, fixing hardware and avionic equipment previously removed.
8. Remove all the tools and other items from the work area.
9. Perform the system Operation Test in accordance with the applicable AMP DMs:
   - 89-A-21-90-00-00A-320A-A, Integrated environmental control system (ECS) kit - Operation test, or
   - 89-A-21-40-00-00A-320A-A, Heating system - Operation test.
10. Return the helicopter to flight configuration and record for compliance with Part II of this Service Bulletin on the helicopter logbook.
11. Gain access to My Communications section on Leonardo WebPortal and compile the “Service Bulletin Application Communication”.

    As an alternative, send the attached compliance form to the following mail box:

    engineering.support.lhd@leonardo.com

    and (for North, Central and South America) also to:

    AWPC.Engineering.Support@leonardocompany.us

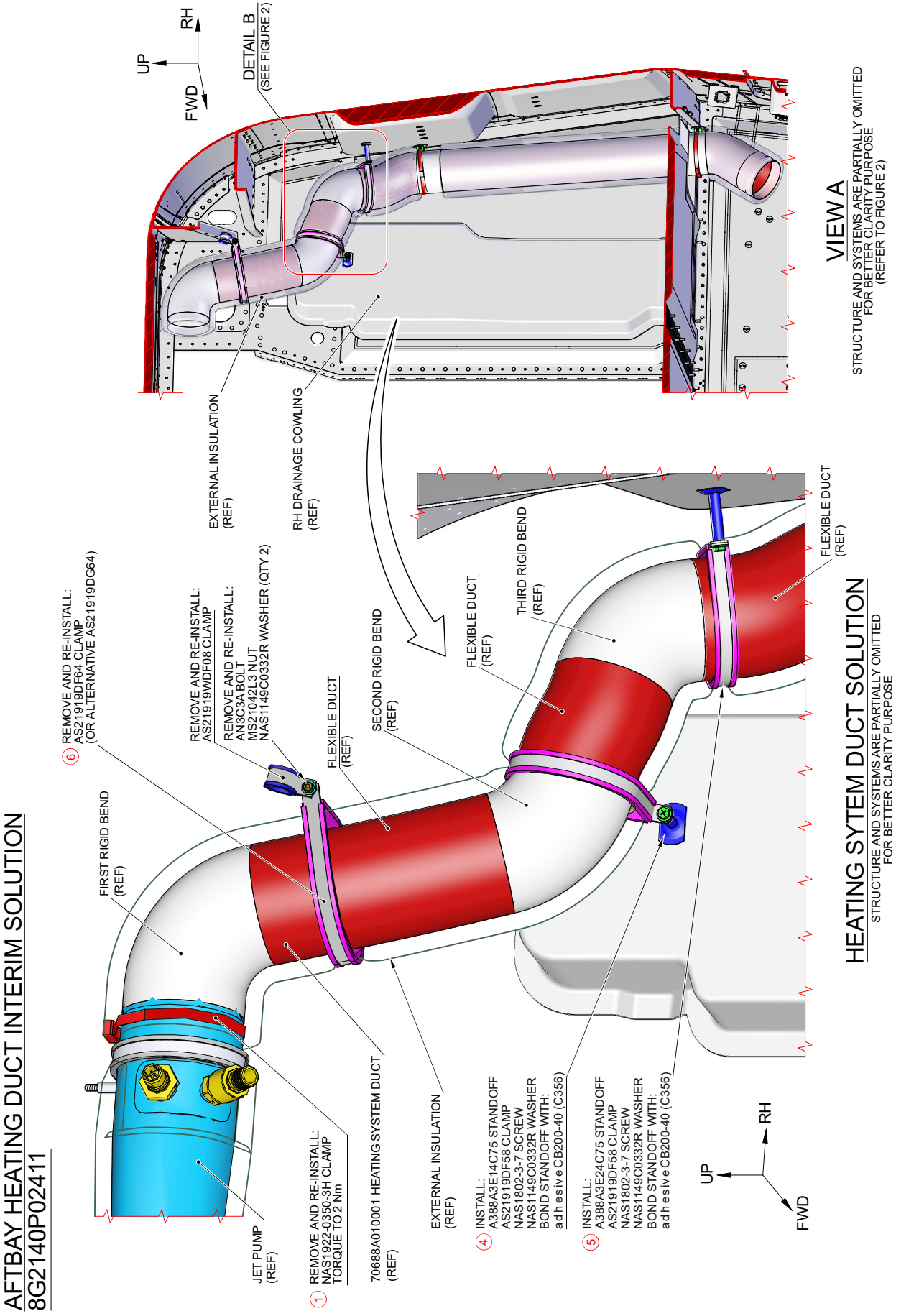
AFTBAY HEATING DUCT INTERIM SOLUTION
8G2140P02411
UP
RH
FWD
DETAIL B
(SEE FIGURE 2)
VIEW A
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED
FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 2)
EXTERNAL INSULATION
(REF)
RH DRAINAGE COWLING
(REF)
HEATING SYTEM DUCT SOLUTION
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED
FOR BETTER CLARITY PURPOSE
6 REMOVE AND RE-INSTALL:
AS21919DF64 CLAMP
(OR ALTERNATIVE AS21919DG64)
REMOVE AND RE-INSTALL:
AS21919WDF08 CLAMP
REMOVE AND RE-INSTALL:
AN3C3A BOLT
MS21042L3 NUT
NAS1149C0332R WASHER (QTY 2)
FLEXIBLE DUCT
(REF)
SECOND RIGID BEND
(REF)
FLEXIBLE DUCT
(REF)
THIRD RIGID BEND
(REF)
FLEXIBLE DUCT
(REF)
FIRST RIGID BEND
(REF)
JET PUMP
(REF)
1 REMOVE AND RE-INSTALL:
NAS1922-0350-3H CLAMP
TORQUE TO 2 Nm
70688A010001 HEATING SYSTEM DUCT
(REF)
EXTERNAL INSULATION
(REF)
4 INSTALL:
A388A3E14C75 STANDOFF
AS21919DF58 CLAMP
NAS1802-3-7 SCREW
NAS1149C0332R WASHER
BOND STANDOFF WITH:
adhesive CB200-40 (C356)
5 INSTALL:
A388A3E24C75 STANDOFF
AS21919DF58 CLAMP
NAS1802-3-7 SCREW
NAS1149C0332R WASHER
BOND STANDOFF WITH:
adhesive CB200-40 (C356)
UP
RH
FWD

Figure 1

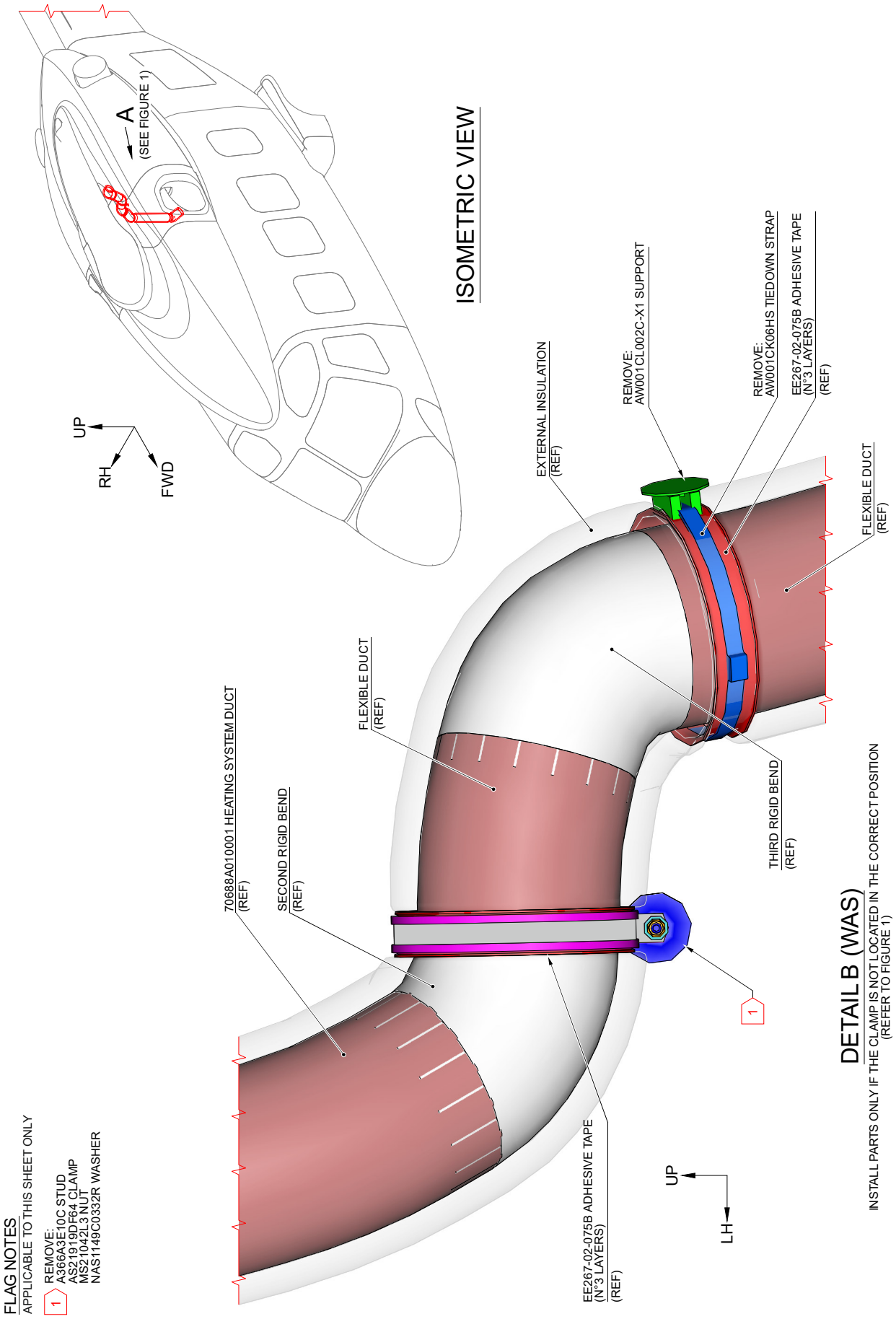
ISOMETRIC VIEW
A
(SEE FIGURE 1)
UP
RH
FWD
EXTERNAL INSULATION
(REF)
REMOVE:
AW001CL002C-X1 SUPPORT
REMOVE:
AW001CK06HS TIEDOWN STRAP
EE267-02-075B ADHESIVE TAPE
(N°3 LAYERS)
(REF)
FLEXIBLE DUCT
(REF)
70688A010001 HEATING SYSTEM DUCT
(REF)
SECOND RIGID BEND
(REF)
FLEXIBLE DUCT
(REF)
THIRD RIGID BEND
(REF)
1
EE267-02-075B ADHESIVE TAPE
(N°3 LAYERS)
(REF)
UP
LH
DETAIL B (WAS)
INSTALL PARTS ONLY IF THE CLAMP IS NOT LOCATED IN THE CORRECT POSITION
(REFER TO FIGURE 1)
FLAG NOTES
APPLICABLE TO THIS SHEET ONLY
1
REMOVE:
A366A3E10C STUD
AS21919DF64 CLAMP
MS21042L3 NUT
NAS1149C0332R WASHER

Figure 2

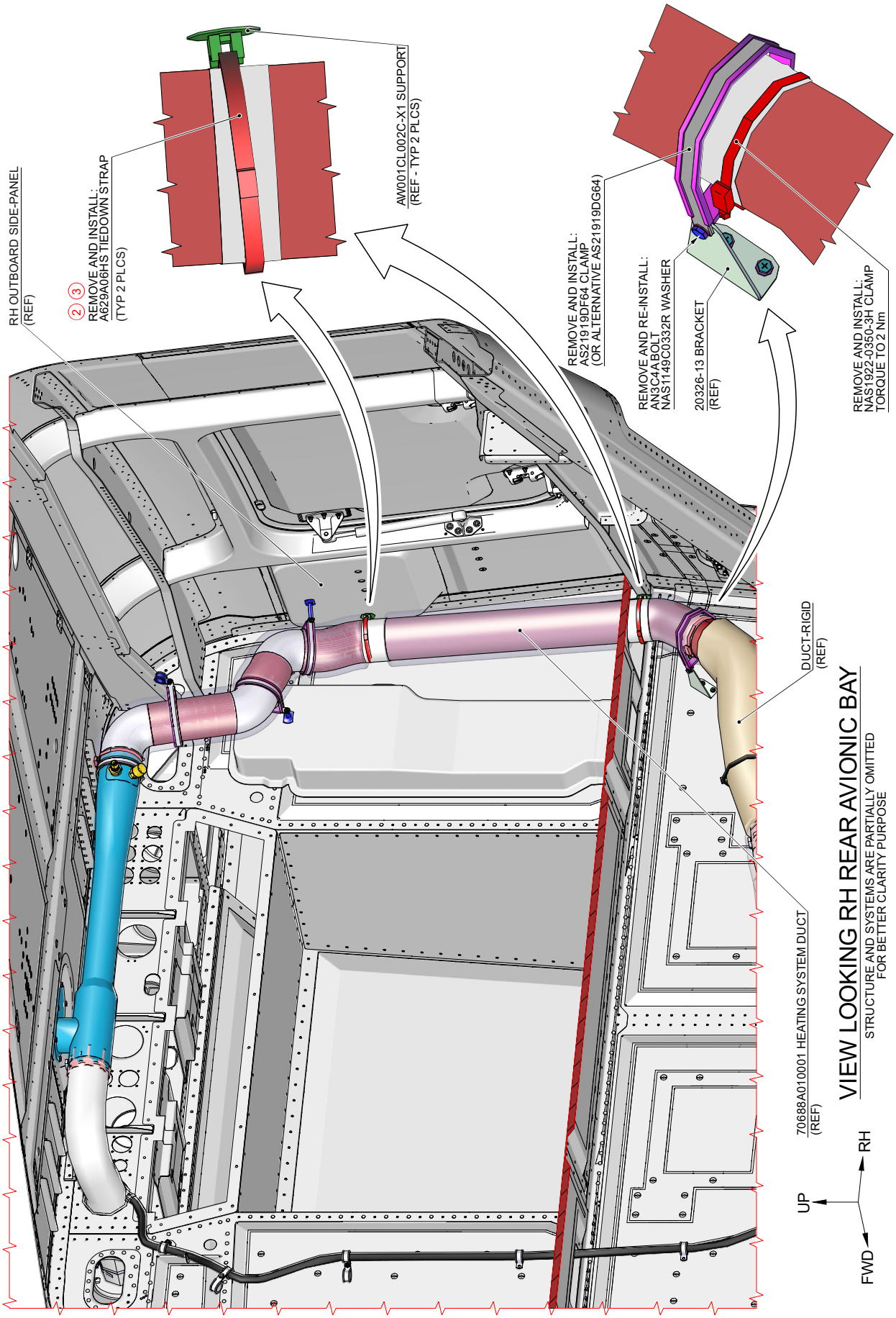
RH OUTBOARD SIDE-PANEL
(REF)
② ③
REMOVE AND INSTALL:
A629A06HS TIEDOWN STRAP
(TYP 2 PLCS)
AW001CL002C-X1 SUPPORT
(REF - TYP 2 PLCS)
REMOVE AND INSTALL:
AS21919DF64 CLAMP
(OR ALTERNATIVE AS21919DG64)
REMOVE AND RE-INSTALL:
AN3C4ABOLT
NAS1149C0332R WASHER
20326-13 BRACKET
(REF)
REMOVE AND INSTALL:
NAS1922-0350-3H CLAMP
TORQUE TO 2 Nm
DUCT-RIGID
(REF)
70688A010001 HEATING SYSTEM DUCT
(REF)
VIEW LOOKING RH REAR AVIONIC BAY
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED
FOR BETTER CLARITY PURPOSE
UP
RH
FWD

Figure 3

ANNEX A

SERVICE BULLETIN “SB-70688-21-01” REV.0, DATE 26/01/2023

SERVICE BULLETIN

SB-70688-21-01

SENIOR AEROSPACE BWT (BWT)
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SERVICE BULLETIN
STANDARD

70688A010001 (BWT33906-1) PART MODIFICATION

1. PLANNING INFORMATION

A. EFFECTIVITY

All AW189 aircraft. This change applies to BWT33906-1.

B. CONCURRENT REQUIREMENTS

Not Applicable.

C. REASON

This service bulletin is issued in order to give the required instructions to improve the current design regarding P/N: 70688A010001 (BWT33906-1) in relation to three failures (Helicopter S/N's 89002, 92006 and 92007).

D. DESCRIPTION

On a few AW189 helicopters, a malfunction of the Heating System occurred where on three events, the heating duct 70688A010001 (BWT33906-1) was found to be damaged and the flexible portions disassembled from the rigid sections, resulting in fibers of insulation being blown into the cockpit and cabin.

E. COMPLIANCE

Mandatory - Service Bulletin must be accomplished used for VSBs that are mandated or that the equipment manufacturer expects to be mandated by airworthiness authorities (through Airworthiness Directives).

F. APPROVAL

The modification described in this SB is reviewed and technically accepted by Leonardo to apply to the Leonardo fleet affected. This SB does not contain any change information that revises the equipment definition covered by Leonardo approved modifications.

G. MANPOWER

This modification requires one manpower. The approximate modification is twelve hours.

H. WEIGHT AND BALANCE

Minimum increase in weight, the aircraft Centre of gravity (C of G) should not be impacted.

I. ELECTRICAL LOAD DATA

Not Applicable.

J. SOFTWARE ACCOMPLISHMENT SUMMARY

Not Applicable

K. REFERENCES

- AW149-BWT-LTS-22-0002 iss3 - (ECM)
- SB189-296 – Leonardo Service Bulletin
- AAIB-27128 - AAIB Bulletin

L. PUBLICATIONS AFFECTED

- AW189 Illustrated Part Data Publication (IPD)

M. INTERCHANGEABILITY / INTERMIXABILITY

The duct is two way interchangeable.

2. MATERIAL INFORMATION

A. REQUIRED MATERIALS

The repair kit (BWT40217-1) consists of the following part numbers:

- BWT40185-1 – (Insulation Jacket – F6019, F6291 & F6314).
- BWT40185-3 – (Insulation Jacket – F6019, F6291 & F6314).
- BWT40216-1 – (Silicone Glass cloth – F6010).
- BWT40320-1 – (Tapes - F6012, F6032 & F6291).

Refer to section 2C for the list of components, quantities and descriptions of the "F" codes stated above.

The items in the kit will be bagged and legibly marked as per the drawing(s)
This kit is to be supplied through LTS only.

Momentive PSA529 Silicone Adhesive (Activate with Momentive SRC18 Catalyst). **BWT cannot supply this material (Local purchase).**

B. INDUSTRY SUPPORT INFORMATION

Not Applicable

C. LIST OF COMPONENTS

- F6012 - Aramid Lacing Tape (Breyden 723Z Nomex Lacing Tape. MPN:502-8 Natural) Qty: 12.192 metres
- F6032 Glass Tape (MPN: 750903 from Krempel or R1246013001 from Rykneld Tean Ltd) Qty: 7.62 metres
- Momentive PSA529 Silicone Adhesive (Activate with Momentive SRC18 Catalyst). **BWT cannot supply this material (Local purchase).**
- BWT40216-1 - F6010 Silicone Coated Glass 76mm Wide strips x 335mm long (Senior Aerospace BWT Proprietary Material) Qty: 12
- F6291 RPFPT Metallised PVF Self Adhesive Tape (MPN: OT157TN Orcon Corporation) 50mm wide Qty: 9.144 metres
- BWT40185-1 Replacement Blanket (Optional – BWT Proprietary Supply).
- BWT40185-3 Replacement Blanket (Optional – BWT Proprietary Supply).

Regarding the shelf life of the materials contained within the modification kit refer to section 2D.

D. SHELF LIFE OF MATERIALS IN THE MODIFICATION KIT

F6291 (RPFPT Metallised PVF Self Adhesive Tape) has an expiry date typically between 12 to 18 months when BWT receive the tape from the manufacturer (The Lamart Corporation based in the USA). BWT will provide the F6291 tape in the mod kit with a label stating the expiry date. The tape may be re-lifed by the manufacturer though this may involve sending a small piece to them. It may be more expeditious to purchase new tape from Senior Aerospace BWT, or direct from Lamart, or one of its distributors. Their product code for the tape approved by Senior Aerospace BWT to its F6291 specification is OT-157TN.
All other materials supplied in the kit do not have a specific shelf life, but it is recommended they are stored in a dry environment and not exposed to direct sunlight.

E. RE-IDENTIFIED PARTS

Modified parts are to be re-labelled as the following: **70688A010001-R.**

F. DISASSEMBLY

Re-move the tie-wraps and loosen clamps to remove the part from the aircraft. The part modifications cannot be completed as installed.

G. MODIFICATION

This Service bulletin is **only** applicable to a duct that **hasn't been damaged.**

Any duct where damage or deformation has occurred **shall be removed and replaced.**

Part modifications as per Steps 1 to 9.

Step 1 - Carefully remove the insulation between the top clamping position of the long flexible length and the jet pump cuffed end, in one complete piece cutting along the length between these 2 points. Preserve for reuse if possible subject to in-service degradation. See Figure 1.

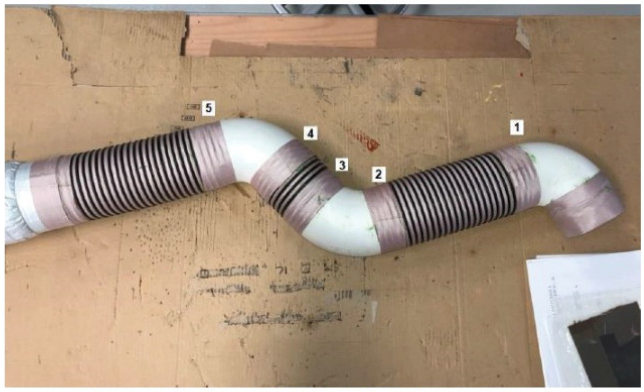

Figure 1 – Duct with the 5 joints to be reinforced.

Step 2 - Prior to starting the joint reinforcement process clean each joint to be modified with Isopropyl Alcohol only. **DO NOT USE ANY MEK** based solvents. For each joint to be reinforced, do the steps 3 to 7.

Step 3 - Apply 2½ turns F6012 aramid lacing tape over the existing cloth tie band and SPS duct membrane close to the edge of the PD composite using PSA529 Silicone adhesive. Ensure the lacing tape is pulled tightly around the duct and do not overlap refer to Figure 2. Repeat the process with a second application of aramid lacing tape at the opposite end of the existing tie band staying within the boundary of the tie band refer to Figure 2.

Figure 2

Step 4 - Apply a 76mm wide piece of F6010 silicone coated glass cloth tape (ref:BWT40216-1) over the lacing tape using PSA529 adhesive to apply (apply adhesive to the red silicone side). Ensure this is pulled tightly as it is wrapped around the duct overlapping the ends by 50mm. The edges of this silicone glass cloth tape shall be applied over the first helix of the flexible and onto the PD composite by 25mm clear of the existing silicone glass cloth tie band refer to Figures 3 and 4.

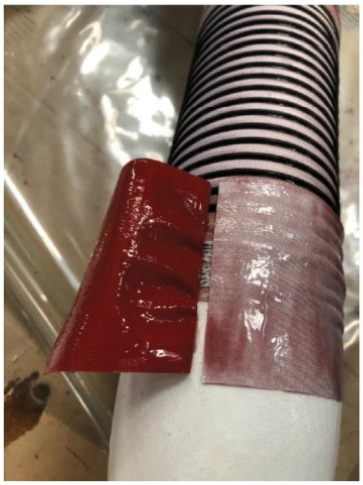

Figure 3

Figure 4

Step 5 - Apply another 2½ turns F6012 aramid lacing tape over the newly applied silicone glass cloth tie band between the two newly applied F6012 lacing tapes beneath the tie band using PSA529 Silicone adhesive. Ensure the lacing tape is pulled tightly around the duct and do not overlap refer to Figure 5.

Figure 5

Step 6 - Apply 4 turns of F6032 glass tape using PSA529 adhesive over the PD body end of the last tie band to be applied. Ensure this is pulled tightly as it is wrapped around the duct. This is to be positioned ½ on and ½ off the silicone glass cloth tie band and PD Duct refer to Figure 6.

Figure 6

Step 7 - Apply another 76mm wide piece of F6010 silicone coated glass cloth tape (ref:BWT40216-1) over the whole area using PSA529 adhesive to apply (apply adhesive to the red silicone side). Ensure this is pulled tightly as it is wrapped around the duct overlapping the ends. The edges of this silicone glass cloth tape shall be applied between the flexible and first band of F6012 lacing tape and onto the PD composite by 25mm clear of the previously applied silicone glass cloth tie band refer to Figures 7 and 8.

Figure 7

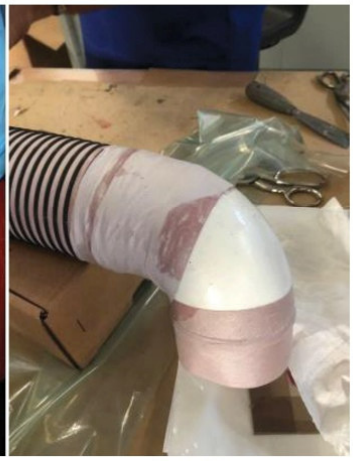

Figure 8

The above steps 3 to 7 are to be repeated on each joint.
Correctly following the work instructions results in the modification shown in Figure 9.

Figure 9

For better understanding, the schematic for the final overlap for each reinforced joint is shown in Figure 10.

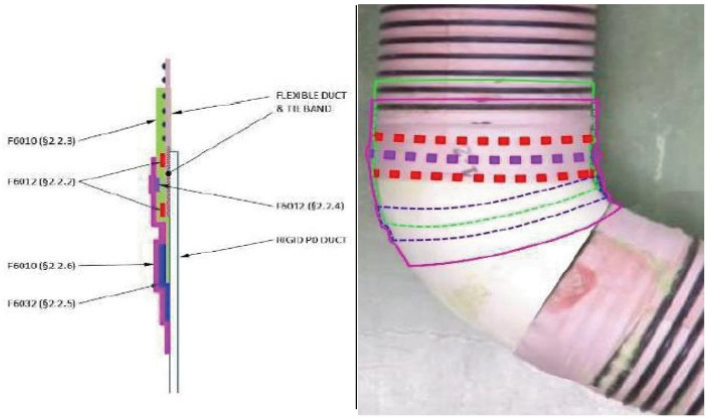

Figure 10

Step 8 - Replace the lagging cover and fibreglass blanket using the removed lagging if it is suitably preserved. Tape all joints and seams with 50mm wide F6291 RPFPT Metallised PVF Self Adhesive Tape. Ensure there are no opportunities for the F6019 Fiberglass Blanket to protrude from under the cover material.

Step 9 - If the removed cover is damaged beyond use replace with a completely sealed 2-piece blanket (BWT40185-1 & BWT40185-3) and tape in place using 50mm wide F6291 RPFPT Metallised PVF Self Adhesive Tape as shown in Figures 11 and 12.

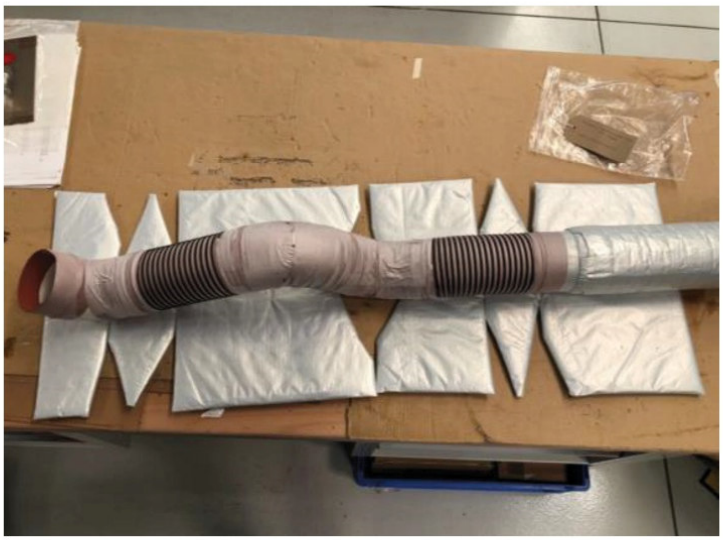

Figure 11

Figure 12

H. ASSEMBLY

Not Applicable.

I. RE-IDENTIFICATION OF THE UNIT

All parts to be reworked through this SB will need to be re-identified through hand amending the original label using a black permanent pen. BWT33906-1 and 70688A010001 should read BWT33906-1-R and 70688A010001-R respectively as shown in figure 14 below including the date of amendment.

Figure 13 – Original Label

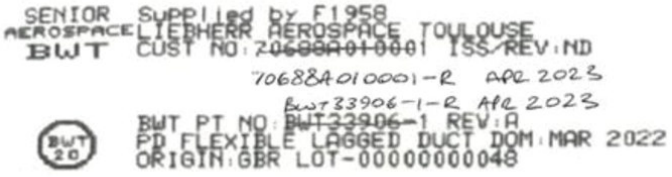

Figure 14 –Modified Label

SERVICE BULLETIN

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Please send to the following address: **LEONARDO S.p.A.** **CUSTOMER SUPPORT & SERVICES - ITALY** **PRODUCT SUPPORT ENGINEERING & LICENSES DEPT.** Via Giovanni Agusta, 520 21017 Cascina Costa di Samarate (VA) - ITALY Tel.: +39 0331 225036 Fax: +39 0331 225988	**SERVICE BULLETIN COMPLIANCE FORM**	Date:
	Number:	
	Revision:	

Customer Name and Address:	Telephone:
	Fax:
	B.T. Compliance Date:

Helicopter Model	S/N	Total Number	Total Hours	T.S.O.

Remarks:

Information:

We request your cooperation in filling this form, in order to keep out statistical data relevant to aircraft configuration up-to-date. The form should be filled in all its parts and sent to the above address or you can communicate the application also via Technical Bulletin Application Communication Section placed in Leonardo AW Customer Portal - MyCommunications Area. We thank you beforehand for the information given.